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ATTACHMENT A
S.N. 10/051,056

1-31-05

SUBSTITUTE SPECIFICATION

TITLE OF THE INVENTION

5 SEMICONDUCTOR DEVICE, METHOD OF MEASURING THE SAME,
AND METHOD OF MANUFACTURING THE SAME

10 TECHNICAL FIELD OF THE INVENTION

The present invention relates to a semiconductor device and a technique for manufacturing the same. Particularly, the present invention relates to a technique effectively applicable to a semiconductor device having a semiconductor element
15 used in a characteristic evaluation or a failure analysis.

BACKGROUND OF THE INVENTION

The conventional characteristic evaluation or the failure analysis of a
20 semiconductor element has been performed using an apparatus, for example, a probe, in which a needle called a probe is contacted to an electrode formed on a surface of a test element group (hereinafter, referred to as TEG), and then an electrical contact to a specific portion of the semiconductor element is measured.

Some methods have been proposed to determine measurements using the
25 probe. For example, in Japanese Patent Application Laid-Open No. 9-326425, by S. Tomimatsu et al., a method is disclosed in which a plurality of probes each having a sharp tip are brought close to the electrodes of the test elements by means of a probe movement mechanism under the control by a probe movement control circuit while observing them using a scanning electron microscope until a contact current is
30 saturated, and, after contacting them surely, a current-voltage characteristic between the probes is measured by an electrical characteristic measurement circuit.